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(31) Priority Document No	:NA	(72) Name of Inventor :
(32) Priority Date	:NA	1)Debjeet Banerjee
(33) Name of priority country	:NA	2)Imon Chakraborty
(86) International Application No	:NA	3)Jayanta Ghosh
Filing Date	:NA	4)Dr. Tanay Pramanik
(87) International Publication No	: NA	5)Dr. Kartik Sau
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(57) Abstract :

The present invention introduces a cutting-edge probabilistic classification approach employing logistic regression to accurately predict avalanche events. The core of the invention lies in a logistic regression framework that calculates the probability of avalanche occurrences by analysing necessary and important parameters of predictive factors, such as temperature variations, and relative humidity. This probabilistic model is adept at handling the dichotomous nature of avalanche prediction, where the outcomes are binary—either an avalanche occurs or it does not. The logistic regression algorithm is fine-tuned to interpret the intricate patterns within the environmental data, providing a reliable and scientifically grounded forecast that can be pivotal for early warning systems. The predictive capability of this model is a significant advancement over existing models, offering a robust tool for disaster prevention and enhancing safety protocols in avalanche-prone areas.

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